

CLAIMS:

1. An assay method for an agent which affects E2F acetylation, the method including:

5 *sub (a)* treating an acetylated E2F polypeptide or peptide with a test compound, *or*

(b) treating with a test compound an E2F polypeptide or peptide which comprises one or more lysine residues

corresponding to those found at positions 117, 120 and 125 in

10 wild-type E2F1, in which polypeptide or peptide one or more of said lysines is not acetylated, or

→ (c) bringing into contact a substance which includes a P/CAF polypeptide which acetylates E2F, a substance which includes an E2F polypeptide or peptide including a site

15 acetylated by P/CAF, and a test compound;

and

(d) determining acetylation of the E2F polypeptide or peptide.

20 2. An assay method for an agent which affects E2F activity, the method including:

(a) bringing into contact E2F and a test compound; and

(b) determining E2F activity in the presence and absence of a P/CAF polypeptide which acetylates E2F.

3. An assay method for an agent which affects E2F activity,
the method comprising:

(a) providing an E2F polypeptide which activates
transcription from a promoter including an E2F binding site,
5 a test compound, and a reporter construct including a
promoter which includes an E2F binding site and which is
operably linked to a reporter sequence for transcription
thereof, under conditions wherein, in the absence of the test
compound being an inhibitor of E2F acetylation, the reporter
10 sequence is transcribed, or

(b) providing an E2F polypeptide which activates
transcription from a promoter including an E2F binding site,
which polypeptide comprises one or more lysine residues
corresponding to those found at positions 117, 120 and 125 in
15 wild-type E2F1, and in which polypeptide or peptide one or
more of said lysines is not acetylated, a test compound, and
a reporter construct including a promoter which includes an
E2F binding site and which is operably linked to a reporter
sequence for transcription thereof, under conditions wherein
20 if the test compound promotes acetylation of E2F the reporter
sequence is transcribed, or

(c) providing an E2F polypeptide which interacts with
P/CAF and activates transcription from a promoter including
an E2F binding site, a P/CAF polypeptide which interacts with
25 E2F, a test compound, and a reporter construct including a

promoter which includes an E2F binding site and which is operably linked to a reporter sequence for transcription thereof, under conditions wherein, in the absence of the test compound being an inhibitor of interaction between P/CAF and
5 E2F, the reporter sequence is transcribed;

and

(d) determining promoter activity.

4. An assay method for an agent which modulates interaction
10 between P/CAF and E2F, the method including:

(a) bringing into contact a first substance including a P/CAF polypeptide or peptide, a second substance including an E2F polypeptide or peptide, and a test compound under conditions in which, in the absence of the test compound
15 being an inhibitor, the first and second substances interact; and

(b) determining interaction between the first and second substances.

sub E1 20 5. An assay method for an agent which affects (i) ability of E2F to stimulate transcription, (ii) induction of S-phase in cells, (iii) oncogenicity of cells, and/or or (iv) induction of apoptosis in cells, the method comprising:

(a) bringing into contact P/CAF and a test compound,

25 and

(b) determining P/CAF acetyltransferase activity; wherein a test compound which inhibits P/CAF acetyltransferase activity is identified as a candidate said agent.

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6. A method according to claim 5 comprising determining acetylation of E2F by P/CAF.

7. A method according to claim 5 comprising determining E2F
10 activity.

claim 5

a
and/or
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8. A method according to any one of claims 5 to 7 wherein a test compound which inhibits P/CAF acetyltransferase activity is further tested for ability to affect (i) ability of E2F to
15 stimulate transcription, (ii) induction of S-phase in cells, (iii) oncogenicity of cells, and/or or (iv) induction of apoptosis in cells.

one
each
line
9. An assay method for an agent which interacts with a
20 region of P/CAF or a region E2F, which region of P/CAF interacts with E2F and which region of E2F interacts with P/CAF, a said agent which interacts with a said region being a candidate modulator of interaction between P/CAF and E2F, the method including:

25 (a) bringing into contact a substance which includes a

P/CAF peptide which interacts with E2F, or which includes an E2F peptide which interacts with P/CAF, and a test compound;

and

(b) determining interaction between said substance and

5 the test compound.

10. A method according to any one of claims 1 to 9 further comprising formulating a said agent into a composition comprising at least one additional component.

11. A method according to claim 10 where the composition includes a pharmaceutically acceptable excipient.

12. A method according to any one of claims 1 to 11 further comprising providing a said agent, or, where said agent is peptidyl, nucleic acid encoding a said agent, to cells to modulate one or more of (i) ability of E2F to stimulate transcription in the cells, (ii) induction of S-phase in the cells, (iii) oncogenicity of the cells, and (iv) induction of apoptosis in the cells.

13. A method according to claim 12 wherein said agent or nucleic acid is provided to cells in vitro.

14. A method according to any one of claims 1 to 9 further

comprising use of a said agent, or, where said agent is peptidyl, nucleic acid encoding a said agent, in the manufacture of a medicament for treating a disorder of cell growth.

5 15. A peptide fragment of E2F or of P/CAF, which peptide is about 40 amino acids or less, and which modulates interaction between E2F and P/CAF.

10 16. A peptide according to claim 15 which is an E2F peptide comprising one or more lysine residues corresponding to those found at positions 117, 120 and 125 in wild-type E2F1.

a 15 17. A peptide according to claim 15 ~~or claim 16~~ which is about 20 amino acids in length. *just nuc for*

a 18. An isolated nucleic acid encoding a peptide according to claim 15 ~~any one of claims 15 to 17~~.

20 19. A peptide according to any of claims 15 to 17 or nucleic acid according to claim 18 for use in a method of treatment of a disorder of cell growth in a human or animal body.

25 20. Use of a peptide according to any of claims 15 to 17 or nucleic acid according to claim 18 in the manufacture of a

medicament for treatment of a disorder of cell growth in a human or animal body.

21. An agent obtained by a method according to any one of
1, 2, 3, 4, 5 and 9
5 claims ~~1 to 9.~~

22. An agent according to claim 21, or, where the agent is
peptidyl, nucleic acid encoding the agent, for use in a
method of treatment of a disorder of cell growth in a human
or animal body.

23. Use of an agent according to claim 21, or, where the
agent is peptidyl, nucleic acid encoding the agent, in the
manufacture of a medicament for treatment of a disorder of
cell growth in a human or animal body.

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